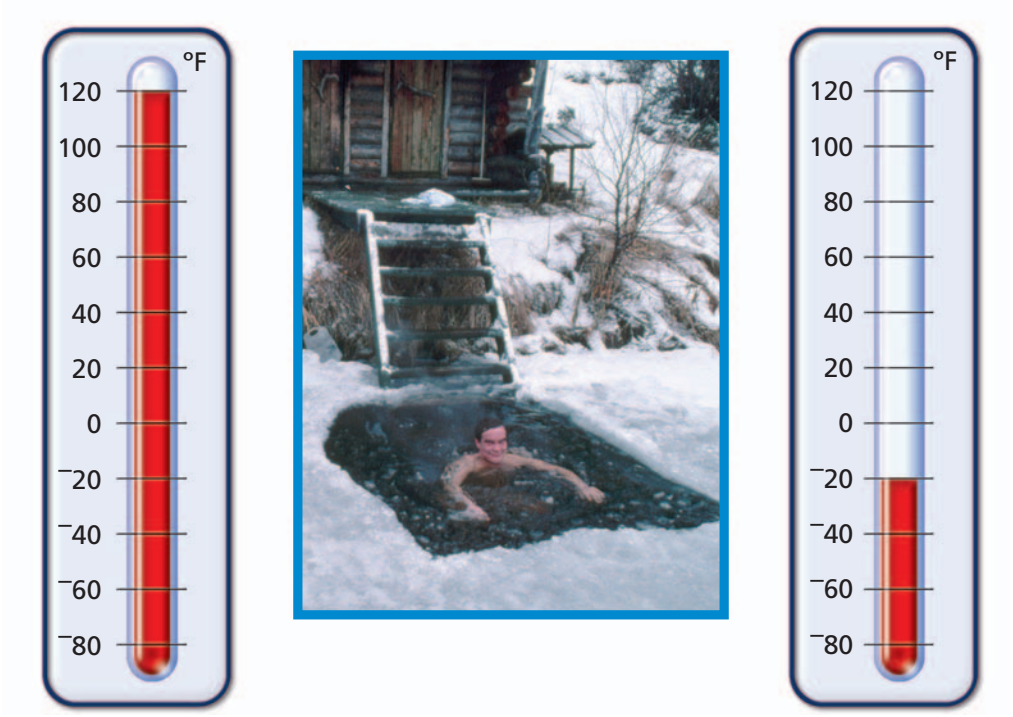
1.2 From Sauna to Snowbank

The record high and low temperatures in the United States are 134°F in Death Valley, California and ⁻80°F in Prospect Creek, Alaska. Imagine going from 134°F to ⁻80°F in an instant!

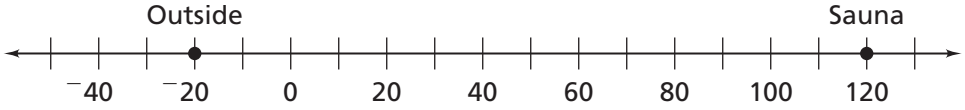
In Finland, people think that such temperature shocks are fun and good for your health. This activity is called sauna-bathing.

In the winter, Finnish people sit for a certain amount of time in sauna houses. The houses are heated as high as 120°F. Then the people run outside, where the temperature might be as low as ⁻20°F.

Inside the Sauna **Outside in Snow**



The two thermometers shown are similar to number lines. One horizontal number line can show the same information as the two thermometers.



On the number line, a move to the left is a move in a negative direction. The numbers decrease in value. A move to the right is a move in a positive direction. The numbers increase in value. On the thermometers, a move down means the number values decrease and the temperatures get colder. A move up means the number values increase and the temperatures get hotter.

Problem 1.2 Comparing and Ordering Positive and Negative Numbers

Sketch number lines to show your reasoning.

A. Order these temperatures from least to greatest.

$0°F$ $115°F$ $^{-}15°F$ $^{-}32.5°F$ $^{-}40°F$ $113.2°F$ $^{-}32.7°F$

B. For each pair of temperatures, identify which temperature is further from $^{-}2°F$.

1. $6°F$ or $^{-}6°F$?

2. $^{-}7°F$ or $3°F$?

3. $2°F$ or $^{-}5°F$?

4. $^{-}10°F$ or $7°F$?

C. Identify the temperature that is halfway between each pair of temperatures.

1. $0°F$ and $10°F$

2. $^{-}5°F$ and $15°F$

3. $5°F$ and $^{-}15°F$

4. $0°F$ and $^{-}20°F$

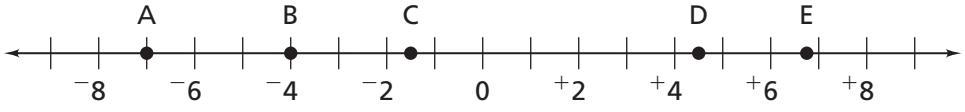
5. $^{-}8°F$ and $8°F$

6. $^{-}6°F$ and $6°F$

7. During one week, the high temperature was $60°F$. The halfway temperature was $15°F$. What was the low temperature?

D. Name six temperatures between $^{-}2°F$ and $^{+}1°F$. Order them from least to greatest.

E. 1. Estimate values for points A–E.



2. How does the number line help you find the smaller value of two numbers?

F. What are the opposites of these numbers?

1. 3 **2.** 7.5 **3.** $^{-}2\frac{2}{3}$

4. What is the sum of a number and its opposite?

ACE Homework starts on page 16.